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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/761,043 | 01/15/2001 | Shigetoyo Matsumura | 1581.29 | 4250 |

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EXAMINER

METZMAIER, DANIEL S

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| ART UNIT | PAPER NUMBER |
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1712

DATE MAILED: 04/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicant(s)

09/761,043

Applicant(s)

MATSUMURA ET AL.

Examiner

Daniel S. Metzmaier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claims 9-16 are pending. Claims 1-8 were canceled and new claims 9-16 added by the amendment filed February 4, 2003, Paper No. 6, with the two month extension, Paper No. 5.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Romberger et al, US 5,230,833, in view of Payne et al, US 3,860,431; Akira et al., US 4,973,462; TAMA KAGAKU KOGYO, JP 61209909, as evidenced by Derwent Abstract 1986-287846. Romberger et al discloses low metal content polishing slurries for use in

silicon wafer polishing. Romberger et al (column 5, lines 64 to column 6, line 10) discloses low metal content silica may be made from silicate esters. Romberger et al (column 3, line 63 to column 4, line 3) discloses the conventional use of hydrogen peroxide as a biocide agent in silica aquasols employing polyhydric alcohols to eliminate or control microbial growth.

Romberger et al differs from the claims in the instantly claimed and/or preferred pH, the explicit disclosure of the metal content of the sols, and the preferred use of silica produced from silicate esters.

Payne et al (column 4, lines 50-66 and claims) discloses silica sols reading on the instant numerical range claimed for use of hydrogen peroxide as a biocide. The number of species of biocides disclosed in the Payne et al references totals four and the use of hydrogen peroxide as claimed is deemed to be anticipated by the limited number of species.

Both references teach silica sols having pH values of about 8.5. Payne et al teaches anionic sols, which would have an alkaline pH as shown in table 1.

Romberger et al teaches colloidal silica compositions having metal concentrations of less than ppm level but does not specifically define the minimum or specific amounts of the metal concentrations. The use of silica sols produced by silicate esters, otherwise known as silicon alkoxides is conventionally known to provide silica particles having a low metal content due to the absence of metals in the alkoxide starting materials and the hydrolysis media. Said alkoxides are also conventionally known to be less cost effective.

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Akira et al and TAMA KAGAKU disclose high purity silica useful as polishing agents. TAMA KAGAKU discloses silicas formed from silicate esters.

These references are combinable because they teach preserving colloidal silica. It would have been obvious to one of ordinary skill in the art at the time of applicants' invention to employ the minimum pH required in the polishing compositions of Romberger et al for the advantage of reducing washing steps to remove excess alkaline materials in post processing. The pH values are sufficiently close (8.0 to 8.5) that a determination of the minimum pH for the Romberger et al compositions would have been an obvious variation of the pH disclosed in the Romberger et al reference.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to employ the colloidal silica from silicate esters as an advantageous low metal containing silica contemplated in the Romberger et al reference.

Response to Arguments

4. Applicant's arguments filed Feb. 4, 2003 have been fully considered but they are not persuasive.

5. Applicants assert the 132 declaration shows the reference '431 materials have inferior stability to those claimed. The instant claims do not define the stability, the concentrations of the slurry, or the metal content of the slurry. All of said parameters would have been expected to have effected the stability of the peroxide and not only the pH of the compositions.

Furthermore, said declaration is not probative. Said declaration employs concentrations of hydrogen peroxide, which are **outside** of the claimed range. Said use suggest the absence of criticality of the concentration range claimed. Also, applicants comparison is not considered a proper comparison since several differences exist between the comparative examples and the differences have not been discussed or explained why said differences would not affect the comparison. Lastly, the comparison is not commensurate in scope with the claims as including several parameters having differences in the comparative examples that are either not discussed and/or the claims do not provide. The claims are silent regarding the stability, the transition metal content (except 12) and the concentration.

6. Applicants declaration does suggest the slurry materials having higher hydrogen peroxide concentrations would degrade to the claimed hydrogen peroxide concentrations.

7. Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection. This rejection has not been made final due to the additional references.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Misra, US 6,530,967, discloses the degradation of peroxide in silica compositions.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (703) 308-0451. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson can be reached on (703) 308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


Daniel S. Metzmaier
Primary Examiner
Art Unit 1712

DSM
April 21, 2003